WHAT IS CLAIMED IS:

1. A crankshaft assembly for an internal combustion engine, comprising:

a crankshaft for transmitting a driving power to a transmission through a clutch;

an elastic member fixed to said crankshaft;

a flywheel fixed to said elastic member such that said flywheel is supported in an elastic relationship with said crankshaft, said flywheel having an engageable surface at a side opposite to said elastic member in an axial direction of said crankshaft, said engageable surface engageable with an associated member of the clutch to receive a load therefrom in said axial direction when said engageable surface is engaged with said associated member of the clutch;

said elastic member having a first predetermined rigidity in its rotating direction, said first predetermined rigidity being large enough to effectively transmit the driving power to said transmission through the clutch, said elastic member having a second predetermined rigidity in said axial direction, said second predetermined rigidity being small enough to shift a resonance frequency of a bending vibration out of a target frequency band of a forced vibration, while ensuring to prevent a failure of disengagement between said engageable surface of the flywheel and said associated member of the clutch.

2. The crankshaft assembly as set forth in claim 1, wherein said second predetermined rigidity is 600kg/mm to 2200kg/mm.

3. The crankshaft assembly as set forth in claim 1, wherein said second predetermined rigidity is ~~600kg/mm to 1700kg/mm.~~

15

4. The crankshaft assembly as set forth in claim 1, wherein said target frequency band is derived during acceleration of the engine.

5. The crankshaft assembly as set forth in claim 1, wherein an axial run-out of said engageable surface ~~when rotated by said crankshaft is no more than 0.1mm.~~

6. In a crankshaft assembly for an internal combustion engine, said crankshaft assembly including a crankshaft, an elastic member fixed to said crankshaft, and a flywheel fixed to said elastic member, said flywheel having an engageable surface at a side opposite to said elastic member in an axial direction of said crankshaft, said engageable surface engageable with an associated member of a clutch, a method for forming the crankshaft assembly comprising steps of:

fixing said flywheel to said elastic member to form a unit;

assembling said unit onto said crankshaft with the elastic member mounted onto said crankshaft so as to support said flywheel in an elastic relationship with said crankshaft;

processing said engageable surface of the flywheel based on an assembled condition between said elastic member and said crankshaft so as to minimize an axial run-out of said engageable surface.

7. The method as set forth in claim 6, wherein the minimized axial run-out is no more than 0.1mm.

8. The method as set forth in claim 6, wherein said crankshaft has an axial end having a first annular section extending radially inward, a second section extending axially from the inward end of said first section toward said associated member of the clutch, and

a third circular section extending radially from said second section, said elastic member is of an annular shape having a fourth section extending axially and defining therein a mounting opening which receives said second section of the crankshaft therein and a fifth section extending radially and facing said first section of the crankshaft, and said processing of the engageable surface is performed based on the assembled condition between said first section of the crankshaft and said fifth section of the elastic member and/or between said second section of the crankshaft and said fourth section of the elastic member.

9. A crankshaft assembly for an internal combustion engine, comprising:

a crankshaft for transmitting a driving power to a transmission through a clutch;

an elastic member fixed to said crankshaft;

a flywheel fixed to said elastic member such that said flywheel is supported in an elastic relationship with said crankshaft, said flywheel having an engageable surface at a side opposite to said elastic member in an axial direction of said crankshaft, said engageable surface engageable with an associated member of the clutch to control transmission of the driving power between the crankshaft and the transmission;

said engageable surface having an axial run-out which is no more than 0.1mm for ensuring a smooth engagement with said associated member of the clutch.

10. The crankshaft assembly as set forth in claim 9, wherein said elastic member has a first predetermined rigidity in its rotating direction, said first predetermined rigidity being large enough to effectively transmit the driving power to said transmission through

the clutch, said elastic member having a second predetermined rigidity in said axial direction, said second predetermined rigidity being small enough to shift a resonance frequency of a bending vibration out of a target frequency band of a forced vibration, while ensuring to prevent a failure of disengagement between said engageable surface of the flywheel and said ~~associated member of the clutch.~~